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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,305	05/30/2001	Shawn E. O'Hara	81382/JDL	7639

7590                    07/03/2003

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NGHIEM, MICHAEL P

[REDACTED] ART UNIT

[REDACTED] PAPER NUMBER

2863

DATE MAILED: 07/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/870,305	O'HARA ET AL.
	<b>Examiner</b> Michael P Nghiem	<b>Art Unit</b> 2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 11 June 2003.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 2 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 22,23,26 and 28 is/are rejected.
- 7) Claim(s) 1,3-21,24,25,27,29 and 30 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 30 May 2001 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1)  Notice of References Cited (PTO-892)      4)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.  
 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)      5)  Notice of Informal Patent Application (PTO-152)  
 3)  Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.      6)  Other:

**DETAILED ACTION**

***Request for Continued Examination***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 17, 2003 has been entered.

***Election/Restrictions***

2. Applicant's election with traverse of Species I, directed to Claims 1-30 in Paper No. 6 is acknowledged. The traversal is on the ground(s) that the claims 1-30 are readable on both Species I and II. This is not found persuasive because at least claim 2, by reciting that the fine bow correction circuit is located entirely on the substrate, claims a feature that is directed to Species II only (see specification, page 5, lines 7-11).

The requirement is still deemed proper and is therefore made FINAL. Claim 2 is withdrawn from consideration.

***Sp cification***

3. The disclosure is objected to because of the following informalities:

- "5,585,386" (e.g. page 2, lines 24, 25) should be – 5,585,836 --.
- "it" (page 3, line 5) should be deleted.
- "CEPA 63" (e.g. page 15, line 15) should be – CEPA 163 --.
- "Block 130" (page 18, line 27) should be – Block 160 --.

Appropriate correction is required.

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o).

Correction of the following is required:

- claim 6, "... a stored value that selects one of the delays".
- claim 9, "...the fine bow correction circuit is implemented at a segment level selected from one of the following groups: 2, 4, 8, or 16 LED elements."
- claims 12, 21, 30, "... and the second circuit selects delays that are offset by one delay between the odd row and the even".
- claim 13, "...means for selecting one of the delays to be applied to the timing means in accordance with a predetermined parameter and placing the parameter within the means for selecting".
- claim 14, "...a multiplexer configured to select one of the delays to the timing means in accordance with the predetermined parameter".

- claim 17, "...forming the second circuit with a delay clock having a fixed clock reference for unique fixed delays which has a frequency that can be changed to produce different delay increments".

***Drawings***

5. The drawings are objected to under 37 CFR 1.83(a) because they fail to show RTL feature (e.g. page 13, line 20), RTL circuit (page 13, line 24), Controller 88 (e.g. page 14, lines 16, 27), COR 61 (e.g. page 15, line 15), BIN 65 (e.g. page 15, line 15), and circuitry providing offsets for pixel data (e.g. 17, lines 21-22) as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP 608.02(d). Correction is required.

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first and second circuits (claims 1, 5, 13), circuit trace between the two fine bow correction circuit portions (claims 4, 19, 27), and delay repeat circuit (claims 8, 18) must be shown or the feature(s) cancelled from the claim(s). No new matter should be entered.

7. Figures 2a and 2b should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed

drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

8. The drawings are objected to because element "130" (Fig. 8c) should be element – 160 --. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

9. Claims 1 and 24 are objected to because of the following informalities:

- claim 1, "a delays" (line 16) should be – delays --.
- claim 24, "the software accessible register" should be – a software accessible register --.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2863

Claims 22-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Apparatus claims cannot comprise steps.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 22, 23, 26, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Pham et al. (US 5,585,836).

Pham et al. discloses all the claimed features of the invention including:

- an electronic printing product (Fig. 4) having pixel alignment circuitry defined by the steps of:

- providing a substrate (250) having a plurality of printing elements (elements on 250, Fig. 4) with associated driver circuitry (310) coupled to an interface board (400, 700, Figs. 5, 7, 9), and timing means (clock 212) for selectively exposing each of the printing elements for a line time (Fig. 6);
- creating a coarse adjustment circuit (206) on the interface board, the coarse adjustment circuit having circuitry that aligns pixel data in integral numbers of line times (even numbers);
- forming a fine adjustment circuit (204) located at least partially on the substrate, the fine adjustment circuit providing a plurality of delays (two bits dot shift on 210, 211) to each of the elements, wherein each of the delays is a fraction of an exposure period of the timing means (delays are fraction of clock cycle);
- and selecting one of the delays in accordance with a predetermined parameter (206, 207);
- forming the fine adjustment circuit with a software accessible register (314, 316) for delay selection of each element;
- forming the fine adjustment circuit wherein the plurality of delays are modifiable to allow for different levels of fine pixel adjustment (column 10, lines 39-52);
- selecting the delays such that the delays are repeated with a first delay following a last delay forming a repeated delay circuit from multiples of the delays (multiple bit shifts on 210, 211).

***Allowable Subject Matter***

12. Claims 24, 25, 27, 29, and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. Claims 1 and 3-21 would be allowable if rewritten or amended to overcome the objection set forth in this Office action.

***Reasons For Allowance***

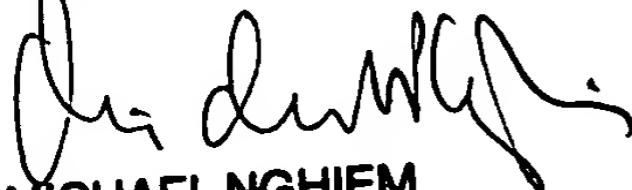
14. The combination or method as claimed wherein the second circuit selecting one of a set of a delays that improves linearity of the pixels within the line by a fraction of a pixel pitch (claim 1, 13) or forming the fine adjustment circuit wherein the software accessible register can be loaded via a JTAG serial data path (claim 24) or the fine bow correction circuit forms the fine bow correction circuit such that it is located at least partially on the interface board and provides at least one circuit trace that carries a plurality of signals to the fine bow correction circuit on the substrate, wherein the signals are not concurrently active (claim 27) or providing the elements arranged in a plurality of rows and wherein the fine adjustment circuit selects different delays for different rows (claim 29) is not disclosed, suggested, or made obvious by the prior art of record.

***Contact Information***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Nghiem whose telephone number is (703) 306-3445. The examiner can normally be reached on M-H from 6:30AM – 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached at (703) 308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



MICHAEL NGHIEM  
PRIMARY EXAMINER

Michael Nghiem

June 27, 2003